

REMARKS

The description has been amended to lend antecedent support to terminology in the claims. Claims 3, 14-21, and 23-28 have been cancelled, and claims 1-13, and 22 amended to further patentably distinguish the invention from the prior art. Since claim 1 is submitted to be allowable and generic, withdrawn claims 4, 9 and 13 are submitted to be allowable, and withdrawn claims 12 and 22 have been amended to expedite the prosecution. Such cancellations and amendments of claims are only for the purpose for expediting the prosecution of this application and are not to be construed as an abandonment of any of the novel concepts disclosed therein.

The office action states:

Claims 1-3, 5, 6, 8, 10, 11, 14-17, 20, 21, 25, 26, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Kazuyoshi et al. ("Kazuyoshi") (JP 2-11941) Translation submitted with IDS on 28 January 2004.

Regarding Claim 1, Kazuyoshi discloses an electroacoustic waveguide system, comprising: an acoustic waveguide (Fig. 3) having an open end (right side of waveguide) and an interior; a first acoustic driver (Fig. 3e, driver at left end) connected to said acoustic waveguide having a first radiating surface (radiating into wave guide) and a second radiating surface (backside or driver radiating outside or waveguide), constructed and arranged so that said first radiating surface radiates sound waves into free air and said second radiating surface radiates sound waves into said acoustic waveguide so that sound waves are radiated at said open end (right side or waveguide); and a source of opposing sound waves in said acoustic waveguide (driver on bottom wall of waveguide) for opposing a predetermined spectral component of said sound waves radiated into said acoustic waveguide to oppose the acoustic radiation of said predetermined spectral component from said acoustic waveguide (Kazuyoshi discloses second driver cancels the 3rd order resonance frequency; Page 4, paragraphs 2-6).

Regarding Claim 2, Kazuyoshi further discloses an acoustic port, coupling said interior with free air (Fig. 3, right end of waveguide).

Regarding Claim 3, Kazuyoshi further discloses said predetermined spectral component comprises the opposition frequency (Kazuyoshi discloses 3'd order resonance frequency cancellation; Page 4, paragraphs 2-6; Fig. 3c).

Regarding Claim 5, Kazuyoshi further discloses said source or opposing sound waves comprises a second acoustic driver arranged and constructed to radiate sound waves into said acoustic waveguide (Fig. 3e, driver attached to bottom side or waveguide).

Regarding Claim 6, Kazuyoshi further discloses an acoustic port, coupling said interior with free air (Fig. 3, right end of waveguide).

Regarding Claim 8, Kazuyoshi further discloses predetermined spectral component comprises a dip frequency at which said waveguide system produces an acoustic null, absent said source of opposing sound waves (Kazuyoshi discloses canceling 3rd order resonance frequency, i.e. acoustic null, Page 4, paragraphs 2-6).

Regarding Claim 10, Kazuyoshi further discloses said source or opposing sound waves comprises a second acoustic driver arranged and constructed to radiate sound waves into said acoustic waveguide (Fig. 3e, driver attached to bottom side of waveguide).

Regarding Claim 11, Kazuyoshi discloses an electroacoustic waveguide system, comprising: an acoustic waveguide (Fig. 3) having an open end (right end of waveguide) and a closed end (left end of waveguide) and further having an effective length; an acoustic driver for radiating sound waves into said waveguide, positioned in said acoustic waveguide so that there is an acoustic null at said open end at a dip frequency (Kazuyoshi discloses positioning driver at $2/3\lambda$ to cancel the 3rd order resonance frequency, i.e. dip frequency, Page 4, paragraphs 2-6).

Regarding Claim 14, Kazuyoshi discloses an electroacoustic waveguide system comprising: an acoustic waveguide (Fig. 3) having an open end (right end of waveguide) and a closed end (left end of waveguide) and a wall connecting said open end and said closed end; a plurality of acoustic drivers, each having a first radiating surface and a second radiating surface; wherein a first of said acoustic drivers is placed in said wall of said acoustic waveguide (driver on bottom side of waveguide, Fig. 3e) so that said first radiating surface of said first acoustic driver radiates into said acoustic waveguide and said second radiating surface of said first acoustic driver radiates into free air.

Regarding Claim 15, Kazuyoshi further discloses a second of said acoustic drivers is positioned in said closed end of said acoustic waveguide (left end of waveguide). Regarding Claim 16, Kazuyoshi further discloses a second of said plurality of acoustic drivers is placed in said wall of said acoustic waveguide so that said first radiating surface of said second driver radiates into said acoustic waveguide and said second radiating surface of said second acoustic driver radiates into free air (Fig. 6).

Regarding Claim 17, Kazuyoshi further discloses combining radiation of said plurality of acoustic drivers to produce an acoustic null at the open end of said waveguide at a dip frequency (Kazuyoshi discloses second driver cancels the 3rd order resonance frequency; Page 4, paragraphs 2-6).

Regarding Claim 20, Kazuyoshi discloses an electroacoustic waveguide system comprising: an acoustic waveguide (Fig. 3) having an open end (right end of waveguide) and a closed end (left end of waveguide) and an effective midpoint; a plurality of acoustic drivers; and an acoustic compliance acoustically coupling a first of said plurality of acoustic drivers and said acoustic waveguide (it is inherent that air within the waveguide will provide an acoustic compliance).

Regarding Claim 21, Kazuyoshi further discloses a first of said plurality of acoustic drivers is positioned at approximately said effective midpoint (Fig. 4).

Regarding Claim 25, Kazuyoshi discloses a method for operating an acoustic waveguide (Fig. 3) having an open end (right side of waveguide) and a closed end (left end of waveguide) and a wall connecting said open end and said closed end, comprising, radiating acoustic energy into said acoustic waveguide (driver at left end of waveguide); and significantly opposing acoustic radiation at a predetermined dip frequency (Kazuyoshi discloses canceling 3rd order resonance frequency, Page 4, paragraphs 2-6).

Regarding Claim 26, Kazuyoshi further discloses opposing acoustic radiation comprises providing opposing acoustic radiation in said acoustic waveguide Fig. 3c; Page 4, paragraphs 2-6).

Regarding Claim 28, Kazuyoshi further discloses an opposing acoustic radiation comprises radiating, by a second acoustic driver (driver on bottom wall of waveguide), said opposing acoustic energy into said acoustic waveguide (Kazuyoshi discloses second driver cancels the 3rd order resonance frequency; Page 4, paragraph- 2-6). (Final Action pp. 3-7).

This ground of rejection is respectfully traversed as applied to the amended claims.

As indicated in our email message of February 21, 2006, following the telephone interview courteously granted by Examiner Michalski, the amended claims more clearly define the aspects of the invention to suppress that radiation at the dip frequency which would produce a dip in the combined radiation from the first radiation surface and the open end. Amended claim 22 defines a particular arrangement of drivers that coacts to establish this suppression.

The reference does not disclose reducing this dip, but only discloses attenuating higher order peaks without attenuating the sound pressure at the fundamental frequency.

Accordingly, withdrawal of the rejection of claims 1-3, 5, 6, 8, 10, 11 and 14-17 as anticipated by the reference is respectfully request. If this ground of rejection is repeated, the Examiner is respectfully requested to quote verbatim the language in the reference regarded as corresponding to each limitation in the rejected claims.

The final action states:

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kazuyoshi as applied to claim 6 above in view of Edgar (US Patent 5,588,06).

Kazuyoshi discloses a system as stated apropos of claim 6 above including a closed end (left end of waveguide). Kazuyoshi does not disclose an acoustic port positioned between said first acoustic drive and said closed end of said acoustic waveguide. Edgar discloses a waveguide system including acoustic ports (Fig. 4,

ports 52) in order to improve the directionality of the speaker system (Col. 5, lines 60-66). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include acoustic ports to improve the directionality of the speaker system as taught by Edgar. P-7.

This ground of rejection is respectfully traversed.

"The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification." *In re Gordon*, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984).

"Although the Commissioner suggests that [the structure in the primary prior art reference] could readily be modified to form the [claimed] structure, '[t]he mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification.'" *In re Laskowski*, 10 U.S.P.Q. 2d 1397, 1398 (Fed. Cir. 1989).

"The claimed invention must be considered as a whole, and the question is whether there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination." *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick*, 221 U.S.P.Q. 481, 488 (Fed. Cir. 1984).

"Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under Section 103, teachings of references can be combined *only* if there is some suggestion or incentive to do so." *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984) (emphasis in original, footnotes omitted).

"The critical inquiry is whether 'there is something in the prior art as a whole *to suggest* the desirability, and thus the obviousness, of making the combination. [citing *Lindemann* with emphasis added.]" *Fromson v. Advance Offset Plate, Inc.*, 225 U.S.P.Q. 26, 31 (Fed. Cir. 1985).

As the Federal Circuit Court of Appeals said in *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999):

Close adherence to this methodology is especially important in the case of less technologically complex inventions, where the very ease with which the invention can be understood may prompt one 'to fall victim to the insidious effect

of a hindsight syndrome wherein that which only the inventor taught is used against its teacher.'

And in *In re Kotzab*, 55 U.S.P.Q.2d 1313, 1316 (Fed. Cir. 2000), the Court said:

[I]dentification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. *See id.* [*Dembiczak*]. Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant. *See In re Dance*, 160 F.3d 1339, 1343, 48 U.S.P.Q.2d 1635, 1637 (Fed. Cir. 1998), *In re Gordon*, 733 F.2d 900, 902, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984). Even when obviousness is based on a single prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference. *See B. F. Goodrich Co. v. Aircraft Braking Sys. Corp.*, 72 F.3d 1577, 1582, 37 U.S.P.Q.2d 1314, 1318 (Fed. Cir. 1996).

Claim 7 is dependent upon and includes all of the limitations in amended claim 1. Since claim 1 is not anticipated by the primary reference, it is impossible to combine the primary and secondary references to meet the limitations of claim 7.

"Moreover, we observe that even if these references were combined in the manner proposed by the examiner, that which is set forth in appellant's claims . . . would not result." *Ex parte Bogar*, slip op. p.7 (BPA&I Appeal No. 87-2462, October 27, 1989). "Even if we were to agree with the examiner that it would have been obvious to combine the reference teachings in the manner proposed, the resulting package still would not comprise zipper closure material that terminates short of the end of the one edge of the product containing area, as now claimed." *Ex parte Schwarz*, slip op. p.5 (BPA&I Appeal No. 92-2629 October 28, 1992). "Although we find nothing before us indicating why it would be desired to combine the references in the manner urged by the examiner, it is clear to us that such a modification by itself would not result in that which is set forth in the claims." *Ex Parte Kusko*, 215 U.S.P.Q. 972, 974 (BPA&I 1981).

That it is impossible to combine the references to meet the limitations of claim 7 is reason enough for withdrawing the rejection of it.

In view of the foregoing cancellations, amendments, authorities, remarks and the inability of the prior art alone, or in combination, to anticipate, suggest or make obvious the subject

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Page : 11 of 11

Attorney's Docket No.: 02103-369001 / AABOSS12

matter as a whole of the invention disclosed and claimed in this application, all the claims are submitted to be in a condition for allowance, and notice there of is respectfully requested. Should the Examiner believe this application not be in the condition for allowance, he is respectfully requested to telephone the undersigned attorney at 617-521-7014 to discuss what additional steps are believed to be necessary to place the application in a condition for allowance.

Respectfully submitted,
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